

## Introduction

The research developed inserted in the DiveCropS Project: Diversifying Cropping Systems financed by DAAD of Germany, in the region of Consolación del Sur, in Pinar del Río province, in Cuba,

In this region the use of inappropriate technologies has caused serious damage to agricultural production, decreasing yields and limiting food production, and limited integration of rural actors in carrying out production, transformation and marketing processes significantly limits the productive results of family farming farms



In response to this problem the **Objective:** Implementing a Local Agricultural Innovation System (Sial) is outlined in order to achieve synergy between rural producers for greater agricultural productions in the Consolación del Sur municipality

## Materials and methods

The research was developed with rural producers of the Consolación del Sur municipality, located on the southern plain of the central eastern part of the province of Pinar del Río, Cuba.



## Methodology

- ✓ Diagnosis of farms and research areas.
- ✓ Study to management of soil and water
- ✓ Diagnosis of the model of agricultural production and research the areas .
- ✓ Agroforestry technologies and methodologies registry.
- ✓ Monitoring and validation of the biodiversity
- ✓ Study of the Climatic changes in the region
- ✓ Monitoring and validation of Good Agricultural Practices
- ✓ Validation of the Rural Extension Program in the area



Through the Participatory Rural Diagnosis and field observations, the characterization of the agricultural production of the municipality was carried out.



## Results

Throughout human history, innovation has played a fundamental role in the development of societies. In the agricultural field, innovation is verified as interactive learning that combines scientific knowledge and the knowledge accumulated by producers.

For the implementation of the local agricultural innovation system to confront climate change, the following problems were determined through the diagnosis

- ✓ Low natural fertility and soil degradation.
- ✓ Soil Erosion reaches 21.39% with an Acidity of 93.9%.
- ✓ Salinity is 4.25%, in addition to the advance of the saline intrusion wedge that covers 26.44% of the municipal territory.
- ✓ Loss of biodiversity and ecological potential.
- ✓ Pollution and poor quality of water.
- ✓ There is limited development of Urban and Suburban agriculture.
- ✓ Difficulties with irrigation systems, machinery and the modernization of agroindustry and livestock.
- ✓ Little industrial development related to the agricultural economic base.
- ✓ Limited development and use of renewable energy sources (solar, biomass, etc.)

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## Capacity of the human capital

The management of local agricultural innovation bases its success on the training of human capital, man is the starting point of the success of the results.



## Good Agricultural Practices implemented

- ✓ Diversification of Productions
- ✓ Planting of forest and fruit trees in boundaries or living fences
- ✓ Conformation of Living Barriers
- ✓ Forest design for biological corridors
- ✓ Design of agro-silvo-livestock models
- ✓ Agroforestry and agrobiodiversity techniques.
- ✓ Application of good agricultural practices in crop diversity



Integration is achieved in management with training, innovation, collaboration between local actors and social participation, as essential elements within the of local agricultural innovation.

## Conclusions

- ✓ Agriculture through its production processes generates environmental impacts in the vulnerable zone of the Southern Plain, with severe impacts and great vulnerability to climate change.
- ✓ The implemented of Local Agricultural Innovation System from agricultural producers is the best solution for the confront to Climate Change and to increase the resilience of the system farms and integrated use and management of soil, water, crops and health.